



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of )

Olivier LEGENDRE et al. )

) Group Art Unit: 1106

Application No.: )

) File Wrapper Continuation  
) of Ser. No. 08/501,872 )

) Examiner: I. Bullock

Filed: July 13, 1995 )

For: CATALYTIC TREATMENT OF )  
GASEOUS EFFLUENTS )  
CONTAINING VARYING )  
AMOUNTS OF SULFUR )  
COMPOUNDS )

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

Assistant Commissioner for Patents  
Washington, D.C. 20231

I hereby declare as follows:

1. I am a co-inventor of the above-captioned application and have reviewed the final Official Action made in parent application serial no. 08/501,872 and mailed December 19, 1996. Furthermore, I have reviewed *Goodboy* (U.S. Patent No.

2. I prepared eight activated alumina catalysts as follows:

Hydrargarlite was dehydrated rapidly at 1000°C by a hot gas stream to obtain a product A having a Na<sub>2</sub>O content of 3600 ppm;

A proportion of product A was treated in an aqueous medium according to the process described in EP-A-15,196 to produce a product B having a Na<sub>2</sub>O content of 800 ppm;

Products A and B were mixed; and

The mixture of products A and B was granulated into beads.

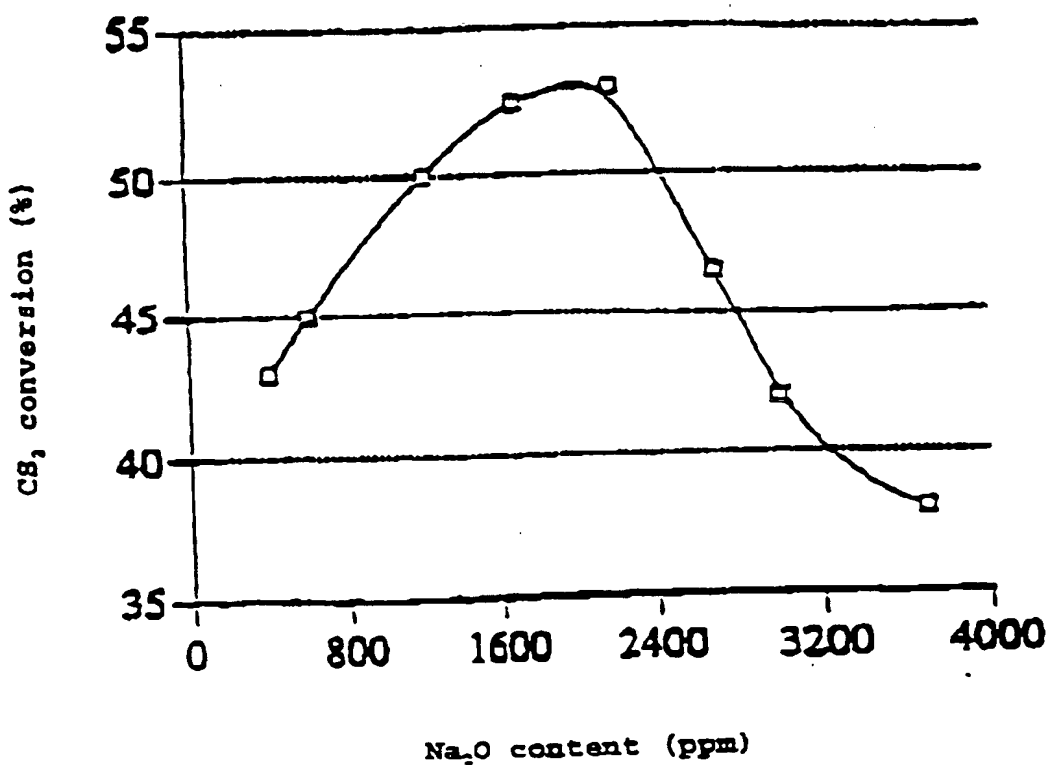
3. The eight activated alumina catalysts had a Na<sub>2</sub>O content of 400, 600, 1200, 1700, 2200, 2700, 3000 and 3700 ppm, respectively. Each catalyst had a specific surface area of 360 ( $\pm 10$ ) m<sup>2</sup>/gm, a bead particle size of 3.1 to 6.3 mm, a pore volume of pores of a diameter greater than 0.1  $\mu$ m of 18.5 ml/100 g alumina, and a pore volume of pores of a diameter greater than 1  $\mu$ m of 15.5 ml/100 g alumina.

4. Each catalyst was contacted with a gas of the following composition:

H <sub>2</sub> S	6%
SO <sub>2</sub>	4%
CS <sub>2</sub>	1%
H <sub>2</sub> O	30%
N <sub>2</sub>	59%

The gas-catalyst contacting was performed in a reactor operating isothermally at 320°C. The reactor had an oxygen content of 10 ppm by volume and utilizing a contact time of 2 seconds under standard temperature and pressure conditions. Each catalyst was measured using an identical reactor volume filled with catalyst and an identical inlet flow rate of gas to be treated. CS<sub>2</sub> conversion was measured after steady state had been obtained in the reaction products exiting the reactor.

5. The following graph shows CS<sub>2</sub> conversion versus ppm Na<sub>2</sub>O in the catalyst.



6. The above graph shows that a catalyst containing 1200 to 2500 ppm  $\text{Na}_2\text{O}$  unexpectedly results in greater than 50%  $\text{CS}_2$  conversion.

7. Examples 6, 8 and 9 of *Goodboy* disclose alumina catalysts having  $\text{Na}_2\text{O}$  contents closest to the claimed range of 1200 to 2500 ppm. The Example 6, 8 and 9 catalysts have a  $\text{Na}_2\text{O}$  content of 0.09 wt% (900 ppm), 0.10 wt% (1000 ppm) and 0.33 wt% (3,300 ppm), respectively. By interpolation using the above graph, the *Goodboy* Example 6, 8 and 9 catalysts would exhibit  $\text{CS}_2$  conversions of 47.5, 48.1 and 38.9%, respectively (assuming that they are identical in every way to the catalyst described in paragraph 3 above, except for  $\text{Na}_2\text{O}$  content). By comparison, the above graph shows that a catalyst containing 1200 to 2500 ppm  $\text{Na}_2\text{O}$  converts at least 50%  $\text{CS}_2$ .

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful and false statements may jeopardize the validity of the application or any patent issued thereon.

  
Christophe NEDEZ

October 29, 1997  
Date

# EXHIBIT I

